

Charged Up



ELECTRIC VEHICLE ASSOCIATION OF SAN DIEGO (EVAOSD)

An affiliate of the Electric Auto Association (EAA)

Website: www.evaosd.org

And we're on Facebook (www.facebook.com/evaofSanDiego)

Officers:

- President: Raejean Fellows
- Vice President: David Crow
- Treasurer: Lloyd Rose
- Secretary: David Crow
- Program Chairman: Staff
- Newsletter Editor: David Crow
- Webmaster: Staff

Monthly Meetings: The 3rd Wednesday of the month, (No Meeting in December).

Meeting Location, Date and Time:

Center for Sustainable Energy
 9325 Sky Park Court, Suite 100
 San Diego, CA 92123
 Wednesday, 18 January, 7:00 P.M.

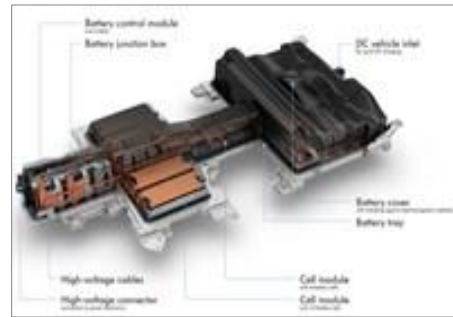
Meeting Agenda: News, Guest Speakers, Project Status, Events

Inside this issue:

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Newsletter Topics:

Battery Coverage



CALIF Tough on VW



Local Bros Do Good



Message from the President

Hello EV Enthusiasts,

2017 - What an exciting year for EVs! With the launch of the Chevy Bolt, the Tesla Model 3 on the horizon, as well as other impressive new entrants, the Chrysler Mini-Van, and Hyundai Ionic, we are entering a golden age for the Electric Vehicle!

Don't miss this chance to socialize with a great group of EV owners/enthusiasts. Our meeting will be packed with interesting information. We will hear about UCSD Engineers for a Sustainable World's (ESW) Solar Car project, a summary of our participation at the SD International Auto Show, an update from the Center for Sustainability Energy, and a lively dynamic discussion of our event and project plans for 2017, including an invitation to collaborate with Plug-in-American (PIA), as well as the showcase of a Tesla P85D, with road trips stories from it's owner.

I look forward to seeing you Wednesday and getting your ideas for our Chapter.

- Raejean

p.s. Remember to login to the new EAA site: www.electrcauto.org and enter your profile information.



238 mile Chevy Bolt EV

Electric Car Battery Warranties Compared

John Voelcker, GreenCarReports.com, Dec 20, 2016

It's one of the most frequently asked questions by anyone hearing about a modern electric car: do I have to replace the battery?

With 15 years of experience in mobile phones and more than that with laptop computers, most buyers know that lithium-ion batteries lose capacity over time. Replacing phone or laptop batteries, generally for less than \$100, is irritating but not a deal-breaker. The specter of replacing an electric-car battery pack costing several thousand dollars, however, may well be.

The question arose most recently when Chevrolet included the following wording in the owners manual for its Bolt EV 238-mile electric car: Depending on use, the battery may degrade as little as 10 percent to as much as 40 percent of capacity over the warranty period. There are two things every buyer should know.



2017 Chevy Bolt 60 Kwhr Battery Pack

First, yes, electric-car batteries do lose capacity over time—though not nearly as fast as those for consumer-electronics devices with a 1- to 4-year expected life. Losing 10 percent of capacity over an eight- or 10-year warranty isn't too big a deal, but losing 40 percent would be—though that's likely to be only in very, very limited circumstances.

Second, electric-car makers warrant their batteries against excess capacity loss, though the warranties vary considerably. And this is where reader Gary Exner of the Oregon Electric Vehicle Association comes in.

Battery warranties for 12 battery-electric cars sold in the U.S., Dec 2016 [created by Gary Exner] Battery warranties for 12 battery-electric cars sold in the U.S., Dec 2016 [created by Gary Exner] He sent us this useful chart of battery-capacity warranty terms for 12 different battery-electric vehicles now sold in at least parts of the U.S.

Battery Degradation Warranties

Model	Period	Capacity
BMW i3	8yr/100K miles	70%
Chevrolet Bolt EV	8yr/100K miles	60%
Fiat 500e	<i>None - degradation specifically excluded</i>	
Ford Focus Electric	<i>None - degradation specifically excluded</i>	
Kia Soul EV	10yr/100K miles	70%
Mercedes B250e	8yr/100K miles	70% **
Mitsubishi I-MiEV	<i>None - degradation specifically excluded</i>	
Nissan Leaf (24 kW)	5yr/60K miles	9 bars *
Nissan Leaf (30 kW)	8yr/100K miles	9 bars *
Tesla (all)	<i>None - degradation specifically excluded</i>	
smart fortwo electric	unknown or not specified ***	
Volkswagon e-Golf	8yr/100K miles	70%

* The Nissan LEAF has a gauge with 12 "battery capacity bars". 9 bars currently equates to about 70% capacity, but the percentage represented is not specified in the warranty and may be subject to change.

** Mercedes B Class (250e): The lithium-ion battery must maintain its status as a certified battery. To maintain its certified status and its coverage under this Battery Limited Warranty, the vehicle must be brought to an authorized Mercedes-Benz Center annually for (no cost) certification service. To maintain its certified status, timely certification service is required at intervals of 12 months, 24 months, 36 months, 48 months, 60 months, 72 months, and 84 months. Any failure to complete this certification service within two (2) months of any of these intervals will void any coverage offered under this Battery Coverage.

*** smart fortwo

electric battery FAQ: just like us, batteries age. so be aware that the high-voltage battery's capacity will diminish over time. as this happens, both vehicle range and maximum acceleration will be affected. but don't fret, it's just part of the circle of battery life.

smart offers a battery "rental" program for \$80/mo with a guaranteed capacity of 41.6 Ah for ten years. The purchase/lease price of the vehicle is reduced.

Battery Warranties for 12 EV, December 2016 (Created by Gary Exner, Oregon EVA)

He pulled the information, he said, from online manuals and warranty booklets for the different cars, with some filling-in from the carmakers' websites as well.

You'll note that some electric-car brands (BMW, Chevrolet, Kia, Mercedes-Benz, Smart, and Volkswagen) warrant battery capacity at various levels.

Others (Fiat, Ford, Mitsubishi, Tesla) specially exclude capacity from their warranty, which then largely covers only outright failure of the battery, not loss of capacity and hence reduced vehicle range. You should be aware of these exclusions when you consider the purchase of any electric car.



Tesla Model S 85 KWhr Battery Pack, with cover removed

And if you think your usage may be particularly harsh or you will regularly deplete the battery entirely and/or frequently fast-charge it, a capacity warranty may be a very good idea.

At the very least, comparison of battery warranties among different plug-in electric vehicles you may be considering should be a core part of your overall comparisons among models you're assessing.

Remember also that batteries, like human beings, prefer to stay as close as possible to constant temperatures around 70 degrees F, while higher temperatures will cause them to degrade more quickly.

Thus far, electric cars with liquid-conditioned batteries (e.g. Chevy, Tesla) seem to hold their capacity better than those with passive air cooling (e.g. Nissan).

California Now Mandating EVs from Volkswagen

December 22, 2016, by BENG T HALVORSON. Blog.caranddriver.com

83,000 U.S. Volkswagen, Audi, and Porsche models from the 2009 through 2016 model years with emissions-cheating 3.0-liter TDI V-6 engines—some of which will be bought back through a massive settlement—about 16,000 are registered in California. And California, which has set its own ZEV mandate requiring electric vehicles, has taken what might be seen as a disproportionately strong role in determining how Volkswagen makes amends—to the point where Sacramento is dictating the automaker's product lineup.

The federal Secondary Consent Decree released this week for those vehicles included a separate document for California. The California Partial Consent Decree, ancillary to the massive federal Consent Decree that lays out how that will happen, has several state-specific stipulations that have little connection to SUVs and luxury sedans equipped with the TDI V-6. They go well beyond stating to whom Volkswagen should pay fines or how the state should spend its \$800 million share of the \$2 billion VW is mandated to spend for infrastructure updates. It could be the first time ever in which an automaker is required by regulators to build a particular product—a product that might not even have been in the pipeline—as punishment for wrongdoing.



VW Electric E-Golf

“The manufacturers will provide at least three new models of electric vehicles for sale in California—including at least one SUV model—before 2019,” the California Air Resources Board (CARB) said in a statement accompanying the document's release. “The companies must add a second electric SUV model by 2020 and keep these electric models on the market through at least 2025.” 2017 Volkswagen e-Golf Volkswagen of America would not comment regarding California's additional vehicle stipulations and what they might mean for its future product lineup.

CARB specified that the e-Golf can be one of the three models required to go on sale before 2019. But in the near term, that still leaves two other vehicles that are clearly spelled out as fully electric models. That's at least a year earlier than the timeline Volkswagen has specified for the development of its battery-centric Modular Electric Drive (MEB) platform—and production versions of two concepts shown this year, the I.D. EV from the Paris auto show and the Microbus-inspired Budd-e from the CES technology show.

To put on a cynic's hat for a moment, what this might mean is an Audi A3 counterpart to the e-Golf, as well as, perhaps, a compliance run of an electric Tiguan (a vehicle that, as of the 2018 model year, will use the Golf's MQB platform). While that could be the case, California specifies meaningful sales volume, saying that VW is "required to sell 35,000 total units of the three additional BEV models (or their successors) during the seven-year period 2019 to 2025," but that "they are not required to sell 5000 units in any given year."

The California-specific requirements also compel Volkswagen to complete two Green City initiatives. These can include the establishment of car-sharing services, zero-emission transit applications, or zero-emission freight transport projects, and they have to be implemented in cities with a population of 500,000 or more "that predominantly consist of disadvantaged communities" as identified by a mapping tool.

The settlement for California also requires Volkswagen to make a payment of \$25 million by July 1, 2017, in support of vehicle replacement programs and specifically Plus-Up, a program that helps people in low-income communities in the San Joaquin Valley and South Coast regions get an electric vehicle at reduced cost. Their trade-in clunker is crushed onsite.



VW Concept Electric MiniVan

Volkswagen can't sell the extra ZEV credits it earns from these new electric models it sells, either. But the agreement does leave the automaker an emergency lever to pull with an unexpected market turn: If prevailing market conditions, like the price of gas, overall vehicle sales, or the product mix change in a way that makes it difficult to meet battery-electric vehicle (BEV) sales numbers, California will meet with VW to modify the sales targets.

In all, it adds up to a sort of ankle monitor for Volkswagen. The irony is that, a decade from now, Volkswagen might have an advantage over many other automakers because of the mistakes it made in the past.

SPIRA4U makes top ten Startups at LA Auto Show -

“ Meet This Year’s Top Ten Automotive Startups (at LA Auto Show)

- Kirsten Korosec, Fortune Magazine, Sep 22, 2016

Gone are the days when "automotive" meant designing, building, and selling vehicles and parts. These days, the auto world has been turned upside down by emerging technologies that promise to change how people get from Point A to Point B. Major automakers are acquiring or investing in ride-sharing companies, as well as autonomous vehicle and connected car startups. Meanwhile, entrepreneurs, designers, and software engineers are jumping into the industry to bring new services and means of travel to the masses.

AutoMobility LA's advisory board, which includes senior executives from Google (GOOG, +0.19%), Lyft, Nvidia (NVDA, -0.11%), and Pandora, evaluated dozens of applicants. This year's list illustrates just how many opportunities exist within an industry that is rapidly evolving beyond traditional automotive businesses. It's a diverse group, Lisa Kaz, president and CEO of the LA Auto Show and AutoMobility LA, told Fortune.

"Each company has an innovative business model and products/services that we believe will affect the future consumer in positive ways," Kaz said. "Auto-mobility is a broad category, and we believe the companies chosen successfully honor what this competition is about in their own respective ways." ... Spira made the top ten!

Spira4U, Top Ten Finalist,



“Lon Ballard wanted a lightweight, efficient, and affordable alternative to a motorcycle that was safe for its occupants and the pedestrians around it. His solution is Spira4U, a foam and plastic 3-wheel vehicle that handles like a cross between a motorcycle and a go-cart. The vehicle has motorcycle hand controls, as well as foot pedals for the gas and brake. The vehicle comes in gas and electric versions, and is designed for the urban commuter.”



SPIRA

- PASSENGER PROTECTION
- PEDESTRIAN PROTECTION
- GREAT FUEL ECONOMY
- FEWER RESOURCES TO PRODUCE

A photograph showing a fleet of small, futuristic-looking cars parked in a row on a paved surface. The cars are primarily red and black, with some in yellow, purple, and blue. They have a rounded, compact design with large windows and small wheels.

EV WEST

A photograph of a silver sedan, likely a BMW 3 Series, shown from a front-three-quarter view. The car is parked on a light-colored surface.

HPEVS

HI PERFORMANCE ELECTRIC VEHICLE SYSTEMS

The logo features the letters "HPEVS" in a large, bold, green, 3D-style font. The text is flanked by two checkered flags (black and white squares) that appear to be waving. Below the main logo, the full name "HI PERFORMANCE ELECTRIC VEHICLE SYSTEMS" is written in a smaller, green, sans-serif font.

Your Invitation to EVAOSD Membership!

Please, use the EAA Website (www.electrictauto.org) to Join our San Diego Chapter of EAA at:

[EAA Membership Link](#)

And specifically mention San Diego as your chapter.

The EAA website is a great general resource for EV information and the host site for:

www.evaosd.org